Computer Security in the Federal Market

Jim Kerrigan
Director of Research
INPUT, Inc.

Federal Computer Security Climate

- Why write a report?
- Market pressures and forces
- Market structure and forecast
- Agency threats and requirements
- Agency versus vendor views

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Why Write a Report?

- Market uncertainty
- Market volatility
- Over-promised market
- Ada experience

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Positive Market Pressures

- Legislative mandate
- Greater end-user computing
- More information sharing
- Open network architecture

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Positive Market Pressures

- Greater agency awareness
- Publicized network penetration
- Dedicated staffs
- Oversight activities

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Oversight Activities

- Congress
- GSA
- OMB
- NSA
- NIST
- GAO
- CSSAB
- PCIE

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Negative Market Pressures

- Budget constraints
- Competing priorities
- Limited actual harm
- No follow-up legislation

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Negative Market Pressures

- Poor planning effort
  - Integrity and availability overlooked
  - User organizations ignored
  - Inconsistent quality
  - Networking not addressed
  - Contractors not involved

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Market Structure—What's In

- Computer security equipment
  - Includes Tempest equipment
- Software products
  - UNIX features
  - Network security

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Market Structure—What's In

- Professional services
  - Consulting
  - Education and training
  - Software development
  - Systems operations?

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Market Structure—What's Out

- Electronic locking systems
- Fire protection systems
- Encryption devices
- Retina detection systems

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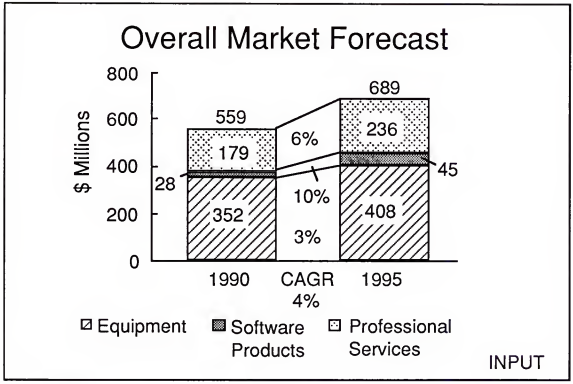

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Network Security

- Estimate ranges
  - $341 million
  - $2.1 billion
- Our estimate
  - $396 million
  - Flat market
  - New opportunities in civilian market

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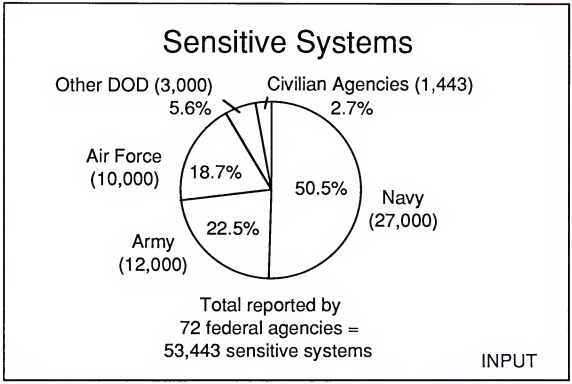

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Reasons for System Vulnerability

- Mainframe and midsize
  - Networking capability
  - Multiuser availability

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Reasons for System Vulnerability

- Microcomputers
  - Lack of controls
  - Diverse, decentralized use
  - Least experienced users
  - Minimal security guidelines

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Perceived Threats

	Respondents (Percent)
Data access	74
Data manipulation	42
Software, system manipulation	42
Site access and damage	21

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Planned Security Measures

	Respondents (Percent)
Software security features	37
Security training/awareness	32
Other security measures	27
Develop contingency plan	18
Conduct risk analysis	14

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Notes

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Functional Requirements

	Respondents (Percent)
Network security	100
End-user access	95
Data security	91
Physical security	86

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Planned Acquisitions

	Respondents (Percent)
Software-driven password security	82
Security training tools	77
Secure networking products	68
Risk management analysis	59
Communications security products	55

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Planned Acquisitions

	Respondents (Percent)
Data encryption equipment	55
Other contractor support	50
Other security devices	50
Plan preparation	45

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Planned Acquisitions

	Respondents (Percent)
Secure UNIX-based products	41
Secure workstations	38
Tempest products	27
Emission control devices	14

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Acquisition Methods—
Computer Security Products

	Respondents (Percent)
GSA schedules	85
RFP for specific purchase	60
RFP for requirements contract	55
Part of other procurements	40
Other methods	20

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Preferred Vendors

	Agency Rank	Vendor Rank
Software	1	3
Hardware	2	2
Professional services	3	4
Systems integrators	4	1

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Reasons for Vendor Revenue Increase

	Respondents (Percent)
Increased security requirements	29
New products available	25
Expanding market	25
Increased demand	18

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Leading Agency Opportunities

	Rank
Treasury	1
Air Force	2
NSA	3
Navy	4
Army	5

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Agency Views
Leading Vendors

- Comsis
- Honeywell
- IBM

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Vendor Views
Leading Vendors

- Digital Equipment Corporation
- AT&T
- IBM
- Honeywell

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Agency Suggestions

- Increase user education
- Integrate security into software
- Increase government orientation
- Improve availability
- Improve ease of implementation

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Vendor Suggestions

- Improve ease of use
- Offer interoperable system
- Improve software features
- Lower the price
- Standardize security

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Other Comparisons

- Technological trends
- Industry trends
- Budget constraints
- DoD versus civilian markets

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COMPUTER SECURITY IN THE FEDERAL MARKET

1 HC
2 slides

A

Jim Kerrigan
Director of Research
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B

FEDERAL COMPUTER SECURITY CLIMATE

- Why Written Report?
- Market Pressures and Forces
- Market Structure and Forecast
- Agency Threats and Requirements
- Agency vs Vendor Views

WHY WRITE A REPORT

- Market Uncertainty
- Market Volatility
- Over-Promised Market
- Add Experience

POSITIVE MARKET PRESSURES

- Legislative Mandate
- Greater End User Computing
- More Information Sharing
- Open Network Architecture

POSITIVE MARKET PRESSURES (cont)

- Greater Agency Awareness
- Publicized Network Penetration
- Dedicated Staffs
- Oversight Activities

OVERSIGHT ACTIVITIES

- Congress
- NIST
- GSA
- GAO
- OMB
- CSSAB
- NSA
- PCIE

NEGATIVE MARKET PRESSURES

- Budget Constraints
- Competing Priorities
- Limited Actual Harm
- No Follow-up Legislation

NEGATIVE MARKET PRESSURES

- Poor Planning Effort
  - Integrity and Availability Overlooked
  - User Organizations Ignored
  - Inconsistent Quality
  - Networking Not Addressed
  - Contractors Not Involved

MARKET STRUCTURE
-WHAT'S IN

- Computer Security Equipment
  - Includes TEMPEST Equipment
- Software Products
  - UNIX Features
  - Network Security

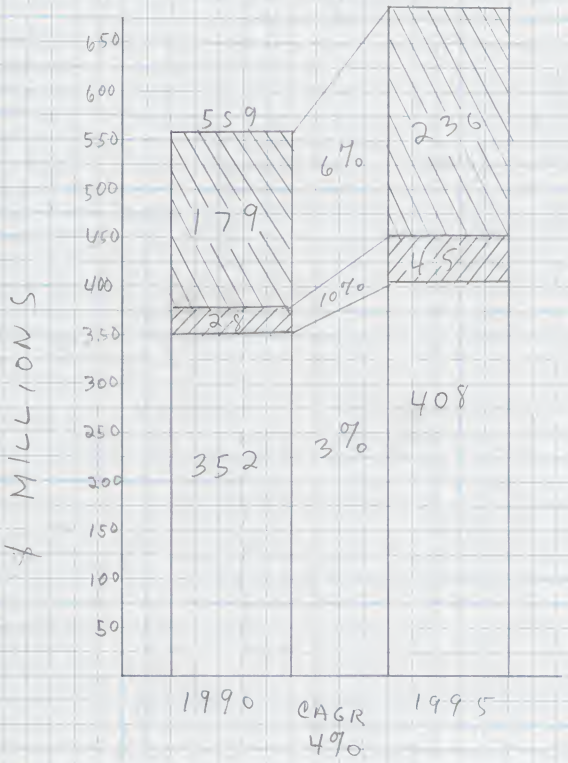
MARKET STRUCTURE
- WHAT'S IN (cont)

- Professional Services
  - Consulting
  - Education and Training
  - Software Development
  - Systems Operations?

MARKET STRUCTURE
- WHAT'S OUT

- Electronic Locking Systems
- Fire Protection Systems
- Encryption Devices
- Retina Detection Systems

OVERALL MARKET FORECAST



NETWORK SECURITY

- Estimate Ranges
  - $341 million
  - $2.1 billion

- Our Estimate
  - $396 million
  - Flat Market
  - New Opportunities in Civilian Market

(14)

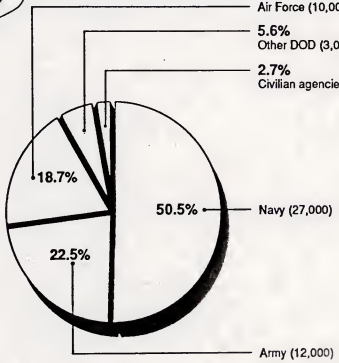
APPENDIX I

Exhibit IV-2

APPENDIX I

Title SENSITIVE SYSTEMS

Number of Sensitive Systems Reported by Agencies as of ~~8/88~~ September, 1988



Total Reported by 72 Federal Agencies = 53,443 Sensitive Systems

Source: Computer Security, Status of Compliance With the Computer Security Act of 1987, Briefing Report to Congressional Requestors, GAO, September, 1988.

AA

REASONS FOR SYSTEM VULNERABILITY

- Mainframe and Midsize
  - Networking Capability
  - Multi-User Availability

REASONS FOR SYSTEM VULNERABILITY (cont)

- Micro computers
  - Lack of Controls
  - Diverse, Decentralized Usage
  - Least Experienced Users
  - Minimal Security Guidelines

PERCEIVED THREATS

	Respondents
Data Access	74%
Data Manipulation	42%
Software System Manipulation	42%
Site Access and Damage	21%

PLANNED SECURITY MEASURES

	Respondents
• Software Security Features	37%
• Security Training/Awareness	32%
• Other Security Measures	27%
• Develop Contingency Plan	18%
• Conduct Risk Analysis	14%

FUNCTIONAL REQUIREMENTS

	Respondents
Network Security	100%
End User Access	95%
Data Security	91%
Physical Security	86%

TO BE ACQUIRED THROUGH FY 93

	Respondents
Software Driven Password Security	82%
Security Training Tools	77%
Secure Networking Products	68%
Risk Management Analysis	59%
Communications Security Products	55%

TO BE ACQUIRED THROUGH FY 93 (cont)

	Respondents
Data Encryption Equipment	55%
Other Contractor Support	50%
Other Security Devices	50%
Plan Preparation	45%
~~Secure UNIX Based Products~~	~~41%~~
~~Secure Workstations~~	~~38%~~
~~Tempest~~	

TO BE ACQUIRED THROUGH FY 93 (cont.)

	Respondents
Secure UNIX-based products	41%
Secure Workstations	38%
Tempest Products	27%
Emission Control Devices	14%

ACQUISITION METHODS - COMPUTER SECURITY PRODUCTS

	Respondents
GSA Schedules	85%
RFP for Specific Purchase	60%
RFP for Requirements Contract	55%
Part of Other Procurements	40%
Other Methods	20%

PREFERRED VENDORS

Vendor Type	Agency Rank	Vendor Rank
Software	1	3
Hardware	2	2
Professional Services	3	4
Systems Integrators	4	1

EXHIBIT V-~~22~~ 7

ANTICIPATED
VENDOR REVENUE CHANGES ~~IN THE FEDERAL MIDSIZE MARKET~~
~~FY1995 - FY1998~~

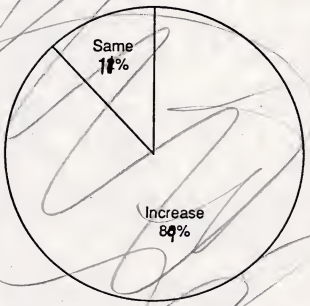
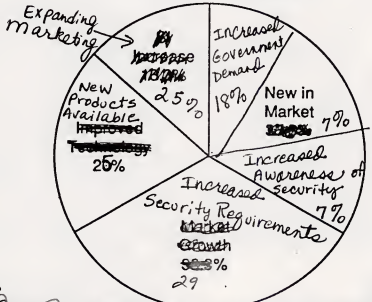


EXHIBIT V-~~23~~ 8

REASONS FOR VENDOR REVENUE INCREASE
FY1995 - FY1998



Note:
* Sums to greater than 100% due to multiple responses

VENDOR VIEWS

LEADING AGENCY OPPORTUNITIES

	Rank
Treasury	1
Air Force	2
NSA	3
Navy	4
Army	5

AGENCY VIEWS
LEADING VENDORS

- Comsis
- Honeywell
- IBM

VENDOR VIEWS
LEADING VENDORS

- Digital Equipment Corporation
- AT+T
- IBM
- Honeywell

AGENCY SUGGESTIONS

- Increase User Education
- Integrate Security into Software
- Increase Government Orientation
- Improve Availability
- Improve Ease of Implementation

VENDOR SUGGESTIONS

- Improve Ease of Use
- Offer Interoperable System
- Improve Software Features
- Lower the Price
- Standardize Security

OTHER COMPARISONS

- Technological Trends
- Industry Trends
- Budget Constraints
- DoD vs. Civilian Markets

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JAMES F. KERRIGAN, CDP
Director, Research

March 6

Andrea Jeris,

Here are the changes on the Computer Security presentation. Please call me if you have any questions.

Jim

Oversight Activities

- Congress
- GSA
- OMB
- NSA
- NIST
- GAO
- CSSAB
- PCIE

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Notes

I put these in two columns so that they would fit on one slide

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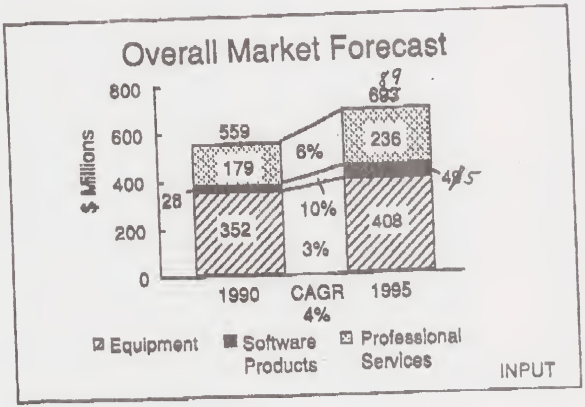

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~~To Be Acquired Through FY 1993~~ Planned Acquisitions

	Respondents (Percent)
Software-driven password security	82
Security training tools	77
Secure networking products	68
Risk management analysis	59
Communications security products	55

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Notes

Should be "Planned Acquisitions"
Result with 25 as sample
the 30 people we talked to

20

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~~To Be Acquired Through FY 1993~~
Planned Acquisitions

	Respondents (Percent)
Data encryption equipment	55
Other contractor support	50
Other security devices	50
Plan preparation	45

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To Be Acquired Through FY 1993 (Cont.)
Planned Acquisitions

	Respondents (Percent)
Secure UNIX-based products	41
Secure workstations	38
Tempest products	27
Emission control devices	14

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REASONS FOR VENDOR REVENUE INCREASE

	Respondents (Percent)
Increased Security Requirements	29%
New Products Available	25%
Expanding Market	25%
Increased Demand	18%